



6 CLEAN WATER
AND SANITATION



Message From the Rector

In an era when the world faces mounting environmental, social, and economic challenges, the role of universities has become more vital than ever. Institutions of higher education are not only centers of learning but also agents of transformation — shaping knowledge, values, and actions that define the future of our planet and humanity.

At Biruni University, we embrace this global responsibility with determination and vision. Guided by the United Nations Sustainable Development Goals (SDGs), we are committed to advancing sustainability through excellence in education, innovative research, and community-centered impact.

Our mission extends beyond academic achievement; it is about producing knowledge that heals, transforms, and sustains life in all its forms.

As a pioneering health sciences university, we channel our scientific expertise toward creating solutions that enhance well-being and social equity. Our multidisciplinary approach allows us to integrate health, innovation, and sustainability — transforming research into real-world benefits for people and communities. The projects and studies we carry out, particularly in the fields of medicine, health, and technology, stand as concrete reflections of this commitment.

Our understanding of sustainability transcends academic boundaries. It is woven into the fabric of our campuses, hospitals, and community initiatives — from energy efficiency and environmentally friendly infrastructure to nurturing students with the awareness and capacity to become responsible global citizens.

Through the dedication of our academic and administrative teams, and the unwavering support of our partners, Biruni University continues to build a resilient, inclusive, and sustainable future. Together, we reaffirm our pledge to serve humanity through science and compassion — today and for generations to come.



Prof. Dr. Adnan Yüksel
Rector, Biruni University

Message From the Editor

The world is entering an age of profound transformation — one that demands wisdom as much as it demands action. Climate disruption, social fragmentation, and economic imbalance have made it clear that the systems which once defined progress can no longer sustain it. Humanity needs a new compass — one that points toward balance, compassion, and collective renewal.

Universities stand at the very heart of this change. They are not merely institutions of teaching and research; they are the laboratories of humanity's future — places where science, conscience, and purpose must meet.

At Biruni University, we see sustainability not as a goal to be reached, but as a way of being. It is the thread that weaves through our research, our classrooms, our hospitals, and our partnerships. It is how we measure success —

by the difference we make in people's lives and the legacy we leave for the generations to come.

Guided by the **United Nations Sustainable Development Goals**, we are reimagining higher education as a force for healing — for reconnecting human progress with planetary well-being, for bridging innovation with empathy, and for transforming knowledge into impact.

Our mission is both scientific and moral: to cultivate minds that create, question, and care; to generate ideas that build a more equitable, peaceful, and sustainable world. Every discovery, every collaboration, every act of learning becomes part of a larger story — the story of humanity's renewal through knowledge.

This report is more than an evaluation of where we stand; it is a reflection of who we choose to be. Biruni University stands as a living commitment

to the idea that education can heal, science can serve, and together we can build a future worthy of hope.



Aslıhan Güzin ALSAN, P.h.D. FHEA
Director of Institutional Impact,
Visibility and Corporate Reputation



BIRUNI UNIVERSITY COMMITMENT TO CLEAN WATER AND SANITATION

Water is the essence of life, the quiet intelligence that sustains every form of existence. To protect water is to protect life itself. In a world where billions still lack access to safe water and sanitation, ensuring clean water for all has become one of humanity's most urgent moral and scientific responsibilities.

At Biruni University, we embrace Sustainable Development Goal 6: Clean Water and Sanitation as a call to action that transcends infrastructure; it is about restoring balance between humanity and nature. We recognize that water security is not only an environmental challenge but also a social, economic, and ethical one. It defines the quality of health, equity, and dignity in every community.

Our mission is to advance water stewardship through education, research, and innovation. As a university deeply rooted in the health sciences, we understand that access to clean water and proper sanitation is the foundation of public health. Every drop of water conserved, every system made more efficient, and every student educated in sustainability contributes to the health of both people and planet.

We work to cultivate a generation of professionals who view water not as a commodity, but as a shared trust—a sacred resource that demands wisdom, respect, and responsibility. Through our sustainability policies, laboratory research, and campus operations, Biruni University integrates water conservation into both practice and consciousness.

This report reflects our commitment to transforming awareness into action to creating systems that honor the natural flow of life and ensure that clean water is a universal right, not a privilege of geography or economy.



Our Approach: Protecting Life Through Water Stewardship

At Biruni University, our approach to water and sanitation is holistic, connecting human health with ecological balance. Our philosophy rests on three pillars: Conservation, Education, and Innovation.

- **Conservation:** We monitor and optimize water use across our campus, hospital, and research facilities—reducing waste, improving efficiency, and investing in recycling systems.
- **Education:** We integrate water literacy into curricula and public outreach, emphasizing the connection between water access, hygiene, and human well-being.
- **Innovation:** Our researchers develop sustainable water management practices, from grey-water reuse technologies to sanitation models designed for health institutions.

We believe that safeguarding water begins with awareness—that the act of conserving a single drop reflects a mindset capable of protecting the planet.



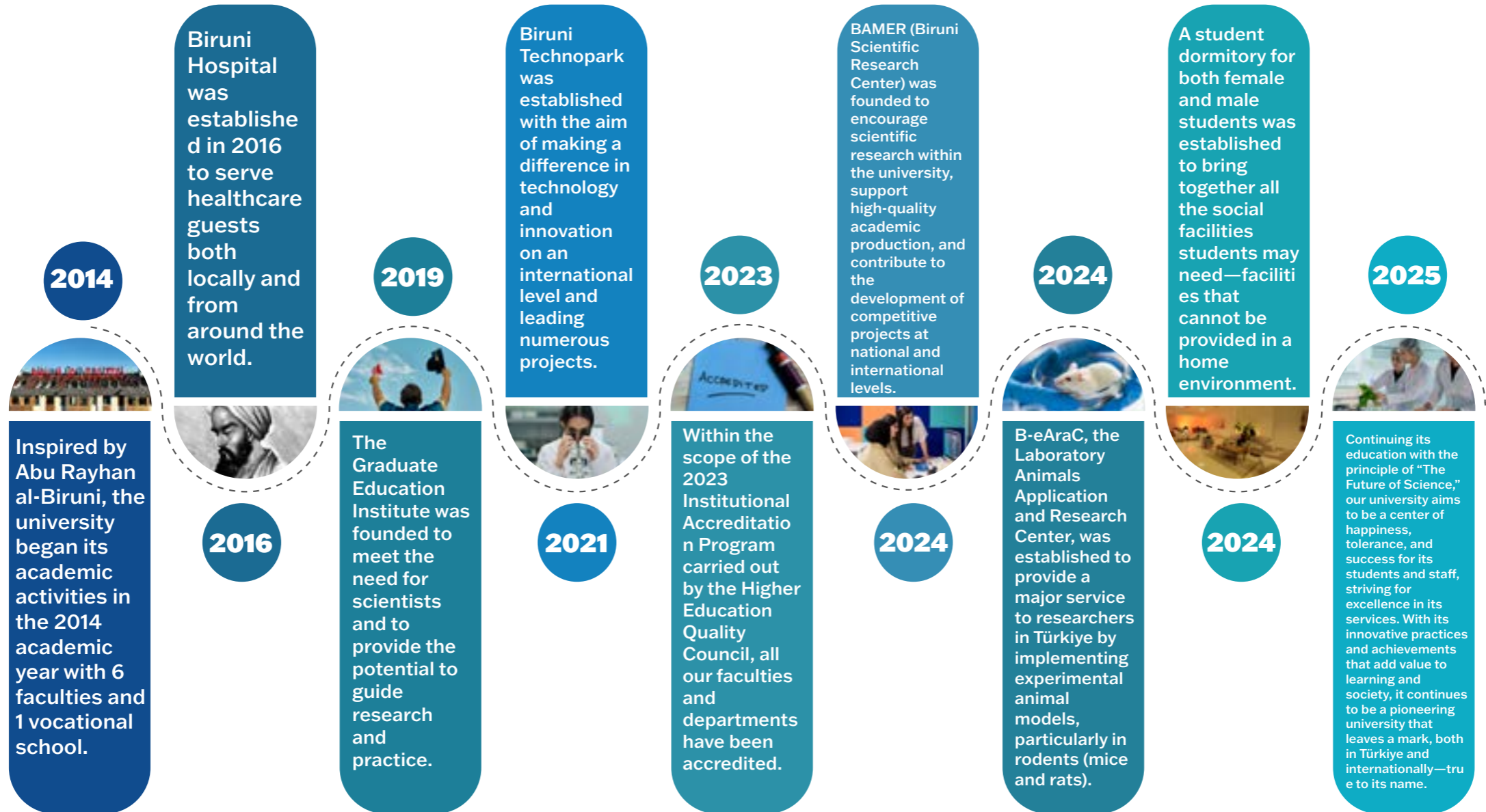
Institutional Framework: Embedding Sustainability in Every Flow

Water management at Biruni University is not an isolated operation; it is a coordinated effort across governance, facilities, and academic programs.

- **Sustainable Infrastructure:** Our campuses and hospitals are equipped with efficient water systems, rainwater harvesting models, and smart monitoring tools that minimize consumption.
- **Operational Efficiency:** Detailed data tracking enables precise reporting and continuous improvement in water usage and wastewater management.
- **Research and Innovation:** Faculty-led studies explore links between water quality, health outcomes, and environmental sustainability—transforming research findings into public solutions.
- **Health and Hygiene Initiatives:** Sanitation standards are integrated into every level of university operations, ensuring clean, safe, and dignified environments for students, staff, and patients.
- **Community Engagement:** Through outreach programs and partnerships with municipalities, Biruni University promotes awareness on hygiene, safe water access, and sustainable urban water systems.

Water is not simply managed at Biruni—it is honored, protected, and studied as the lifeblood of all creation.

O U R S T O R Y



O u r V i s i o n

To be a pioneering university that, true to its name, leaves a lasting mark — leading change through knowledge, innovation, and impact.

O u r M i s s i o n

To be an innovative and leading university that cultivates qualified individuals through transformative education, produces original knowledge at both national and international levels, and contributes to solving societal challenges with scientific and ethical responsibility.

C O R E V A L U E S



K n o w l e d g e

Commitment to learning, discovery, and the pursuit of truth as the foundation of progress.



W i s d o m

Using knowledge with depth, reflection, and ethical judgment to serve humanity.



H u m a n i t y

Placing human dignity, empathy, and compassion at the heart of education, research, and service.



A c a d e m i c F r e e d o m

Protecting the right to think, question, and create freely within an environment of respect and integrity.



P i o n e e r i n g S p i r i t

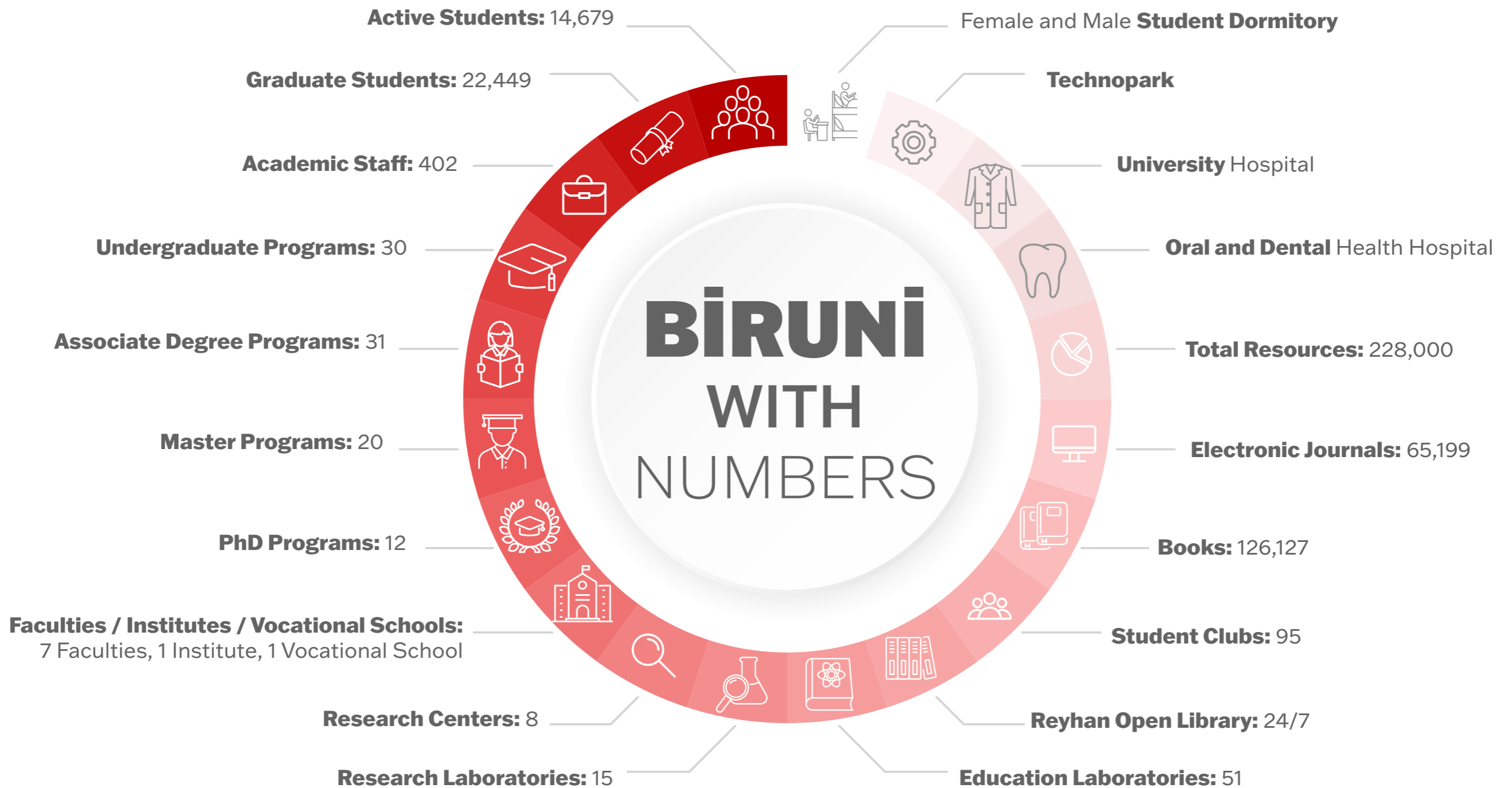
Challenging conventions with creativity and vision; leading transformative change in education and science.



C o u r a g e

Acting with integrity and resilience in the face of uncertainty — daring to stand for what is right and meaningful.

BİRÜNİ WITH NUMBERS



12.571
Campus
Population

26.017 m³

**Volume of water used in the university:
Inbound (treated/extracted water)**

Sustainable Environment, Energy And Water Policy

Biruni University prioritizes environmental sustainability by adopting an environmental policy that promotes the conservation of natural resources, energy efficiency, and water management. Our Sustainable Environment, Energy, and Water Policy aims to minimize the environmental impact of the university's activities and ensure the efficient use of energy and water resources. By promoting environmentally friendly practices across campus, our university raises community awareness about the conservation of energy and water resources and takes responsibility for a sustainable future.

Core Values

Biruni University's Sustainable Environment, Energy and Water Policy is based on the following core values:

1. **Environmental Responsibility:** Our university acts in an environmentally responsible manner and takes the necessary precautions to protect natural resources. Environmental

impacts are taken into account and minimized in all processes.

2. **Energy Efficiency:** To reduce energy consumption and increase energy efficiency, the use of renewable energy sources is encouraged.



Sustainable management of energy use is one of the university's priority goals.

3. **Water Management and Protection:** Efficient and effective use of water resources is ensured. Solutions that reduce water

consumption and encourage water recycling are developed.

4. **Sustainability Education and Awareness:** Educational programs are organized to raise community-wide awareness of environmental, energy, and water management issues. Students and employees are informed about sustainability issues.

5. **Innovation and Technology:** Environmentally friendly practices are disseminated throughout the campus by using innovative technologies in the fields of sustainable environment, energy and water management.

Sustainable Environment, Energy and Water Policy Strategies

Biruni University implements the following strategies for environmental sustainability and

efficient use of energy and water resources:

1. **Use of Renewable Energy Sources:** Our university encourages the use of renewable energy sources such as solar, wind, and geothermal to reduce energy consumption.

Buildings on campus utilize solar panels and energy-efficient solutions.

2. **Energy Efficiency Projects:** Energy management systems have been installed to increase energy efficiency in university buildings, and low-energy lighting, heating, and cooling systems have been implemented. Building insulation and smart energy management systems minimize energy consumption.

3. **Water Conservation and Recycling Programs:** Low-water fixtures and sensor-operated faucets are used throughout the campus to increase water conservation. Additionally, water recovery solutions such as rainwater harvesting systems and graywater recycling systems are implemented.

4. **Environmentally Friendly Building and Landscape Design:** Our university develops green buildings and sustainable landscaping solutions that minimize environmental impact. Energy-efficient buildings, green roofs, and sustainable water management solutions are implemented throughout the campus.

5. **Waste Management and Recycling:** Recycling is a priority in waste management. Waste reduction and recycling strategies aim to reduce energy consumption and minimize environmental impact.

6. **Public Awareness and Education Programs:** Our university regularly organizes education and

awareness programs for students and staff on environmental, energy, and water management. These programs contribute to the development of environmental responsibility awareness.

7. **Continuous Monitoring and Reporting:** Energy and water consumption are regularly monitored, and progress toward achieving sustainability goals is reported. Data gathered through these processes is used to continuously



improve performance.

Goals

Biruni University's Sustainable Environment,

Energy and Water Policy are:

1. **Reducing Energy Consumption:** Reducing energy consumption by 20% across campus and expanding the use of renewable energy sources.

2. **Increasing Water Savings:** By using water recovery systems, reducing water consumption by 30% and ensuring the efficient use of water resources.

3. **Increasing Recycling Rate:** Reducing the environmental impact of waste management processes by increasing the recycling rate on campus by 50%.

4. **Promote Green Building and Landscaping Practices:** To promote energy efficiency and environmentally friendly practices by implementing sustainable green building and landscaping solutions throughout campus.

5. **Increasing Participation in Awareness Programs:** Increasing participation in training programs organized to raise environmental awareness among students and employees by 40%.

Biruni University aims to protect natural resources, reduce environmental impacts, and promote sustainable practices across campus through its sustainable environmental, energy, and water policies. The university is committed to the effective implementation and continuous improvement of this policy.

Water Awareness and Engagement

- Biruni University promotes conscious water use across campus through regular awareness and engagement activities.
- Water Efficiency Awareness Conference (13 March 2025): Organized by the Climate and Energy Community, this national conference emphasized the importance of efficient water use. Distinguished speakers Prof. Dr. İzzet Öztürk and Prof. Dr. Hüseyin Selçuk delivered keynote talks on sustainable water management.
- Biruni Water Week (March): Gathered municipalities, NGOs, and schools under the theme “Every Drop Counts,” featuring exhibitions, art installations, and public discussions.
- Student Awareness Campaigns: Digital screens and posters share water-saving messages, while student clubs lead “Save Water” and “Drop by Drop” campaigns. Biruni TV and official social media platforms publish interviews, short documentaries, and infographics to raise awareness.
- These initiatives aim to foster behavioral change among students and staff toward responsible water consumption.



Comprehensive Water Metering, Resource Management, and Efficiency Infrastructure



Biruni University has an integrated water metering system equipped with digital meters across all units—including campuses, the hospital, the technopark, and student dormitories—to make all water management processes transparent and traceable. This digital infrastructure records not only municipal mains water consumption but also rainwater recovery and potential groundwater (well water) use, ensuring comprehensive water resource management across the campus.

During the period 1 Eylül 2024 – 31 Ağustos 2025, the university's total water consumption was measured as 26.017 m³; this corresponds to a campus-wide daily average of 71 litre of water consumption. Based on the university population of 10.236 people, per-capita daily consumption was calculated as 6,97 litre, which aligns with national efficiency standards set for higher education institutions.

The system is supported by leak detection notifications, monthly consumption dashboards, consumption trends, water footprint measurements, and analytical modules that identify high-risk consumption points. In this way, resource use is optimized while enabling rapid intervention when necessary. All data obtained are regularly evaluated by the Office of Sustainability and Data Valuation and guide the university's policies on water savings, infrastructure renewal, and carbon footprint reduction.

Wastewater Treatment, Pre-Treatment Systems, and a Closed-Loop Approach Focused on Reuse

The university implements a robust pre-treatment and safe discharge system for managing wastewater originating from laboratory, clinical, and hospital units. Before wastewater is transferred to the municipal sewage system, it passes through chemical neutralization tanks, grease traps, and pH balancing units. These structures are designed to minimize environmental risks that may arise especially from laboratory chemicals, medical fluids, and clinical wastes.

Liquids classified as hazardous waste are not disposed of directly by the university; they are safely collected and disposed of only through licensed environmental firms. All analysis reports are archived by the Office of Sustainability, ensuring traceability and regulatory compliance.

Additionally, treated greywater and rainwater recovery systems are actively used in suitable units. The 3000-litre rainwater reservoir located behind the Faculty of Dentistry Hospital supplies approximately 1 500 litre per day and approximately 45 000 litre per month, contributing to the irrigation of a 2 500 m² landscape area. Thus, campus landscaping has become largely independent of potable water consumption.

Within the scope of the 2025 efficiency plan, development work continues on cleaning-water recovery systems, cistern reuse pilot projects, and unit-based water recycling infrastructures. All these processes bring the water cycle closer to a closed-loop model and aim to reduce the university's water footprint.



Pollution Prevention, Safety Protocols, and Emergency Response Capacity



A multi-layered safety system is implemented across the campus to prevent water pollution risks that may arise from chemical, medical, or technical operations. Wastewater from laboratories and workshops is collected on lines completely separate from domestic wastewater; these lines are supported by chemical retention tanks, oil-separator systems, and pre-filtration units.

Rainwater drainage lines are physically separated from chemical waste lines, preventing possible overflows or cross-contamination. Two core protocols regarding water safety and environmental emergencies are actively in force at the university: Leakage and Pollution Emergency Protocol, Pollution Prevention and Waste Management Instruction.

The Occupational Health and Safety (OHS) Unit organizes tailored trainings each year for technical staff and laboratory employees and conducts drills for scenarios such as chemical spills, fuel leaks, or wastewater overflow. In this way, the university maintains a high level of preparedness and a culture of operational safety against risky situations.

Water-Efficiency-Centered Building Design, Smart Systems, and Sustainable Landscaping Practices

Newly constructed buildings at the university are planned in compliance with the BEP (Building Energy Performance) standards, while also embracing a sustainable building approach that targets LEED Silver certification in the coming years. The Directorate of Construction Works and Technical Affairs audits all projects in terms of both energy and water efficiency and implements necessary optimizations.

Various low-consumption fixtures are used to increase water efficiency on campuses:

- 200 motion-sensor, low-flow faucets,
- 150 dual-flush cistern systems,
- Soil-moisture-sensor-based smart landscape irrigation networks,

Preference for drought-resistant native plant species. Thanks to equipment renewals carried out in the Faculty of Dentistry building, an annual total water-consumption saving of %30 has been achieved. In landscape areas, the use of rainwater and greywater significantly reduces dependence on potable water and helps preserve green spaces sustainably.



Free Drinking Water Access, Health Controls, and Plastic Waste Reduction Strategies



Seven central water dispensers are positioned across the entire campus to ensure that students and staff have free access to drinking water. In addition, bottle-filling points located in faculties, libraries, dining halls, and open areas enable approximately %90 of the drinking water consumed on campus to be supplied through the refill system.

Regular pH, bacteriological quality, and microbiological safety tests are conducted at all drinking water points, and results fully comply with health and environmental regulations.

To reduce single-use plastic consumption, the “Refill Campus” initiative has been launched and steel thermoses have been distributed to students/staff. The up-to-date digital map of campus drinking water points is kept accessible online, making it easier for users to reach water sources.

Water Reuse, Greywater Recovery, and Sustainable Technologies in Groundwater Abstraction

Thanks to treated greywater and recovered-water systems, a total of 540 m³ of water is reused annually; this amount corresponds to approximately %2 of total water consumption. This approach makes the campus water cycle more sustainable and reduces pressure on clean water resources.

In cases where the use of well water is necessary, DSI-permitted flow-limited pumps and automatic flow-control sensors are employed; groundwater levels are continuously monitored with smart sensors. Thus, damage caused by over-abstraction is prevented and the sustainability of resources is protected.

All these systems and processes are regularly audited within the scope of the ISO 14001 Environmental Management System, and environmental management performance is presented transparently in annual reports.



Water-Saving Awareness, Community Engagement, and Transforming Campus Culture



Biruni University recognizes that water saving is not only a technical practice but also a social responsibility requiring behavioral change. Therefore, comprehensive awareness-raising efforts are carried out across the campus involving students, academic staff, and administrative employees.

Within the scope of Water Week events organized every March, cooperation is established with municipalities, non-governmental organizations, environmental communities, and schools; panels, seminars, and student workshops are held on the sustainable use of water, the impact of climate change on water resources, and innovative water technologies. These events help the university build a collective consciousness on water management at the local level.

Informative messages on water saving are regularly displayed on digital screens on campus; student clubs run campaigns such as “Save Water” and “Drop by Drop.” In addition, short documentaries, informative videos, interview content, and infographics aimed at increasing water awareness are shared regularly on the university’s YouTube and Instagram channels. This digital communication strategy brings the university’s approach to water management to a wider audience and strengthens the culture of sustainability. All these activities aim to create long-term behavioral change that transforms water-use habits among students, academics, and staff.

Water Governance, Digital Monitoring, Verification, and Transparent Reporting Mechanisms

In line with the principles of transparency and accountability in water management, all processes of data collection, monitoring, and reporting are jointly carried out by the Directorate of Construction Works and Technical Affairs and the Office of Sustainability and Data Valuation. Promoting Water Consciousness in the University and Society Biruni University promotes a culture of conscious water use through training, student engagement, and public events.

- Across campus, 6 awareness boards and 4 digital screens display infographics on responsible water use.
- The Biruni Water Week (March) gathers NGOs, schools, and municipal agencies under the theme “Every Drop Counts”, featuring exhibitions, art installations, and digital challenges. The Climate and Energy Student Community and Biruni Green Team lead volunteer initiatives such as reusable bottle campaigns and household water audits.
- Biruni University, in collaboration with the Istanbul Governorship, has placed informative and attention-grabbing posters across visible areas of the campus as part of its awareness-raising initiatives. The posters feature titles such as “Individual Water Efficiency”, “Water Efficiency for the Future”, “Be a Drop for the Future”, “Save Water While It’s Available”, and “Steps for Water Efficiency in Industry”. This initiative aims to strengthen water-saving awareness among the university community, promote behavioral changes toward resource efficiency, and foster a culture of sustainable water management.
- Furthermore, to raise public awareness on the impacts of climate change on water resources and the importance of water efficiency, the prepared visuals have been displayed in administrative buildings, open spaces, communal areas, and other appropriate locations, ensuring they reach the public directly.
- The university’s outreach is amplified through Biruni TV and official social media channels, which regularly publish interviews, mini-documentaries, and infographics on sustainable water management.



Off-Campus Engagement



In 2025, over 200 students and staff participated in the Marmara Coast Cleanup, collecting hundreds of kilograms of waste while raising awareness on marine pollution and microplastics. Follow-up workshops linked coastal conservation to SDG 6 water-quality goals.

Data from digital meters are collected and verified monthly and transferred to annual sustainability reports through Water Footprint Dashboards. Thanks to the integrated operation of the metering-technical infrastructure and governance structures, the university considers water not merely as a consumed resource but as a circular value that is managed sustainably.

Through this holistic approach, Biruni University has transformed its campuses into a circular water-efficiency ecosystem and institutionalized a management model aligned with the targets under SDG 6.